Dear Federal Communications Commission

Reference WC Docket No. 10-90

Re: Next Generation Network Experiments in rural America (Report and Order in WC Docket No. 10-90)

On behalf of Chaffee County Telecom, LLC dba Colorado Central Telecom and pursuant to the above referenced Docket No. 10-90, we Chaffee County Telecom, LLC dba Colorado Central Telecom with support from Chaffee County, submit the following Expression of Interest.

Chaffee County Telecom, LLC dba Colorado Central Telecom started as a grassroots, privately funded, fixed wireless internet service and VoIP provider. CCT has accomplished the goal of serving the unserved and underserved institutions and residents of communities in rural, central Colorado. Located in Chaffee County, CCT now effectively serves over 400 businesses, residents and anchor institutions.

CCT is the sister company of Crestone Telecom, LLC (CT) basically duplicating the model we started of grassroots, bottom up organization of local investors for local solutions for rural broadband and telephony access. Now over 2 years in operation, we have employed the latest, most effective microwave wireless technology to reach these geographically challenging areas. With a full team of customer service, technical support, operations management and business development personnel, implementing the latest in administrative and technical monitoring software, CT/CCT's internal and external structures are in place and working well.

CT/CCT's Service Packages/Costs and Financial Overview:
We provide a minimum internet package of 4Mbps down x 1Mbps up for $44.95 per month with no additional taxes or fees; with typical maximum residential speeds of 12Mbps down x 2Mbps up for a total of $89.95 per month. All businesses and anchor institutions can customize speeds up to 100Mbps down for $10.00 per mg per month. Our latency rate is well below 60ms, typically 20 – 42ms, and we do not throttle with data caps; we have none. Stream as much as you want! We have the capacity to provide 1Gig of service but to-date no one has expressed that need.

VoIP plans for residential service with traditional features such as call waiting, forwarding, voice mail and unlimited long distance within the continental US are $24.95 per month. VoIP business needs and services can vary widely within a given industry, however in all cases CT/CCT has been able to provide enhanced service with cloud based software management options and high QOS for far less than standard analog providers.

With state-of-the-art technology, customer service and technical support CT/CCT has achieved a healthy and viable business model, easily replicable and sustainable. CT/CCT reached the financial breakeven point in these regions in 1 ½ years – far exceeding business model projections.

The proposed service area (based on identified census blocks) has a good faith belief that the following potential customers lack adequate broadband speeds as defined in the Report and Order referenced above.

**Chalk Creek Census Area**

CCT's ability to provide a cost effective, customizable broadband and telephony solution has resulted in many small and more remote locations within the geographical scope of our point-to-point transmissions expressing great and repeated interest in our services. Without the additional capital to reach these communities we have been unable to replicate our same success. Providing high speed internet and phone will allow interconnection with Chafee county Library, schools and hospitals. A specific example of an area with this need is St. Elmo.

- St. Elmo, Colorado:
  Located at the end of a 12 mile canyon off of Hwy 285 between Buena Vista and Salida, this historical site serves as another one of Colorado's beautiful meccas for vacationing fun. Currently, St. Elmo has NO telephone service. Internet is non- existent. Given the geographic challenges, no private entity can cost effectively deploy the needed infrastructure to serve this unserved market.

- The rural electrical provider for St. Elmo, Sangre de Cristo Electric, has 350 meters throughout the canyon and into town, most are part time residents. The need for phone and internet service connectivity is multi-fold:

- Public Safety – Currently there is one SAT phone for the entire community, located in the General Store.

- First Responder Network Communications – No fire or EMS personal can effectively communicate first responder needs. In this heavily treed terrain with trails accessed by 1000's in the summer months, the need for communication is vital.

- Enhanced Economic Development Potential – There are few overnight accommodations, retail or restaurant options in St. Elmo. No visitor wants, or feels they can stay in locations without internet or phone service. Hence, this is just one example of how *entrepreneurial* options are greatly diminished.

- Three Hundred & Fifty Full and Part Time Residences – Internet & VoIP service to these homes provide residents with the technology needed not solely for entertainment, but - home medical devices, education and location neutral business opportunities. With this much needed infrastructure the potential for full time residency is greatly expanded and home values are not reduced for lack of the basic 21st Century services – phone and internet.

Chalk Creek Canyon and St. Elmo's, Nathrop, CO

-

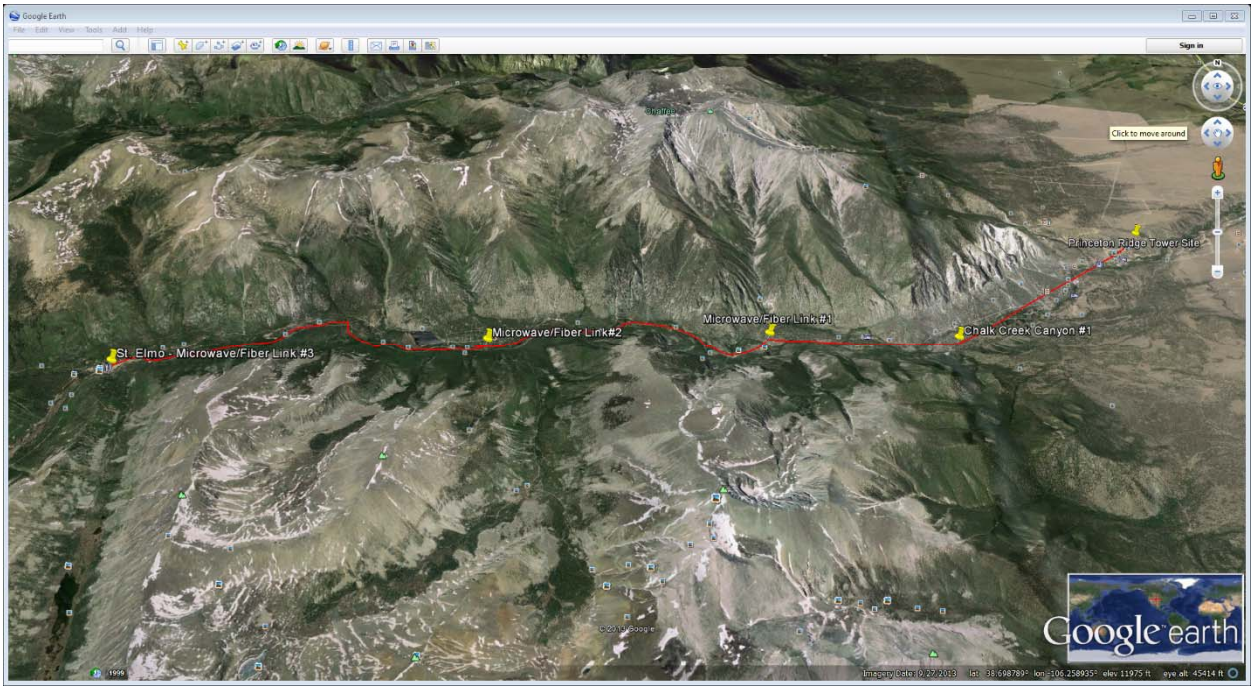
**Technological Options – Proposed Network Experiment Summary:**

The steep canyon terrain that leads to St. Elmo makes many service options untenable. However, it does provide an excellent opportunity to utilize a layered approach and incorporate three separate but complimentary technologies to meet the infrastructure demands of today and into the future.

With this summary we propose how Fixed Wireless, Fiber runs, and White Space Spectrum can be utilized to provide service to very challenging areas. Innovative, practical, and cost effective. We don't think anything like this has been done yet. This can be a model for many other unserved areas in rural mountain locations. In fact, if we get a positive response to this proposal, we have "shovel ready" locations in three other rural Colorado counties where similar kinds of deployment can be effective.

Links from Princeton Ridge Tower (our existing facility) to Microwave/Fiber Link #1 are with Wireless Microwave with one tower location at Chalk Creek Canyon #1. Using 900 MHz and White Space Spectrum, we can service all end users on these two legs – approximately 2.8 miles from Princeton Tower to Marker #1 and 1.83 Miles from Marker #1 to Microwave/Fiber Link #1 – Total of 4.63 miles. AT this point the canyon closes in, becomes too steep and windy to make Microwave Hops. We then switch to Fiber. And run on Sangre de Cristo Electrical Coop Telephone poles approximately 3.10 miles to Alpine Village and Microwave/Fiber Link#2. There we set up a 900 MHz and/or White Spectrum facility to cover the end users in that community. Alternatively, we can run FTTH utilizing the electric end user drops.

Then continue running fiber to the Town of St. Elmo – approx... 4.1 Miles, where the fiber terminates and a final 900 MHz/white spectrum array is set up.



As part of this experimental model, we are working with in partnership intends to implement the following technologies; Fixed Wireless, Fiber runs, and White Space Spectrum to meet the needs of the service area in conformity with the FCC's stated goals contained in its Order.

**The services to be offered include but will not be limited to the following:**

Broadband and VoIP

**The governmental entities participating in this proposed deployment include the following:**

Chaffee County Colorado Government

**Cost Estimates:**

The project we have identified will require $330,000 for a one time cost with no recurring costs after the first year.

The first two legs are Microwave and White Spectrum utilizing one tower: The Tower is solar powered with backup propane generator. We use a shipping container (Zircon) for interior equipment – routers, power supplies, and batteries. With remote monitoring IP based controls we can start the generator when necessary, reboot all the POE's and monitor battery capacity.

To keep costs down, we can utilize the 24GHZ bandwidth for point to point from our Mt. Princeton Tower – capacity up to 1.4 gigabits of backhaul bandwidth.

Total cost of this tower array complete will be around $50,000 – (of course, we could run fiber along this route – cost approximately 5 miles @ $20,000 is $120,000)

At the end of the second leg, we would locate a Sangre de Cristo Electric Pole and switch from Microwave PTP to a fiber run. We would locate this switch at a residence that has electric and avoid the cost of another solar array/tower facility. We have made this kind of arrangement many times in our communities. Cost of this switchover - $12,000 (includes PTP 24GHZ equipment).

Third leg is a fiber run to Microwave/Fiber Link #2 – where we will set up a 900 MHz/white spectrum array to cover the two hundred plus residences and home businesses in Alpine Village. There is a potential in this area to have a number of FTTH end users as well. Cost of this run: 3.10 miles of fiber @ $20,000/mile plus the tower/array $15,000 + $77,000.

Final run is fiber ending at St. Elmo with small tower/array for end users. Fiber is 4.1 miles@ $20,000 = $$82,000 plus $12,000 for the switchover and Antenna/Radios.

Grand Total to provide true Broadband and VoIP service infrastructure to Chalk Creek Canyon –

| | **Cost** |
|---|---|
| 1. Tower facility – Chalk Creek Canyon | $50,000 |
| 2. Microwave to Fiber transition | $12,000 |
| 3. 1st Fiber run | $77,000 |

| | |
|---|---|
| 4. 2nd Fiber run | $82,000 |
| 5. St. Elmo's Fiber to Microwave and radio array | $12,000 |
| Total cost | $330,000 |

That's the infrastructure…then there is installation costs for end users – and here is an interesting experiment. Adaptrum (www.adaptrum.com) is one company that is producing White Space equipment. Right now the cost of end user radios could be as high as $1500/per user and there is no way a private company would be able to put this in the field without assistance. Utilizing White Space spectrum could be extremely important in reaching unserved mountainous areas, and the deployment up Chalk Creek Canyon would be a great test of this new technology.

That said, a regular WISP end user installation of 900 MHz equipment runs about $350. If we use a figure of 250 customers after a three year period, and 20% of them would be White Space, then the installation per customer averages out to be about $580 each or total of $145,000. Potentially, the customers that require the White Spectrum technology could be absorbed into the overall business model.

ROI – Over a three year period, if we estimate having 250 customers on board, with broadband service and VoIP – each customer income around $60 per month equals $15,000/month * 12 months = $180,000 yearly. With initial help with deployment costs, and first year offsets to begin gathering customers, we envision no further assistance would be necessary to run the network and continue to bring on new customers.
We look forward to learning more about the program.

Economic revitalization often eludes many rural communities. In great part, for the 21st Century, this is due to lack of affordable broadband. The large telecommunication players either ignore these areas or offer solutions that are so cost prohibitive as to be unattainable to these rural economically struggling communities. CCT offers a proven cost effective broadband/telephony solution to previously unsolvable rural mountain areas. By employing the latest, most effective microwave wireless technology, we can reach these remote, geographically challenged communities. Our model is grass roots and bottom-up, a combination that makes it uniquely replicable by involving local support similar to the way electricity was brought to rural areas in the 1900's. With a little assistance from top down government sourcing, we can get the job done. We appreciate your consideration of this innovative solution that will serve as a working model for many rural communities to replicate.

Sincerely yours,

*Ralph Abrams, CEO*
Colorado Central Telecom